

We claim:

1. A method of inhibiting neoplastic cellular proliferation and/or transformation of a mammalian cell comprising:

delivering to a mammalian cell that endogenously overexpresses *PTTG1*, a composition comprising an expression vector comprising a promoter and a polynucleotide, said polynucleotide comprising
5 a first DNA segment encoding a mammalian PTTG2 peptide, said polynucleotide being operatively linked to the promoter in a transcriptional unit, said PTTG2 peptide being selected from the group consisting of

(A) a peptide consisting essentially of amino acid residues 1-191 of (SEQ. ID. NO.:64) or a functional fragment thereof comprising at least amino acid residues 1-180 of (SEQ. ID. NO.:64); and

(B) a mammalian PTTG2 peptide having at least about 95% sequence homology with any
10 of (A),

said expression vector being complexed with a cellular uptake-enhancing agent, in an amount and under conditions sufficient to enter the cell, such that the PTTG2 peptide is expressed in the cell, whereby neoplastic cellular proliferation and/or transformation of the cell is inhibited.

2. The method of Claim 1, wherein the polynucleotide further comprises a second
15 DNA segment encoding an uptake-enhancing and/or importation-competent peptide segment.

3. The method of Claim 2, wherein the cellular uptake-enhancing and/or importation-competent peptide segment is a human immunodeficiency virus TAT-derived peptide segment, a signal peptide from Kaposi fibroblast growth factor, ferritin peptide, or lactalbumin- α peptide.

4. The method of Claim 1, wherein the cell is of human origin.

20 5. The method of Claim 1, wherein the cell exhibits neoplastic, hyperplastic, cytologically dysplastic, or premalignant cellular growth or proliferation.

6. The method of Claim 1, wherein the cell is a malignant cell.

25 7. The method of Claim 1, wherein the the cell is a pituitary, colon, leukocyte, breast, or ovarian derived cell.

8. The method of Claim 1, wherein said uptake-enhancing agent is a polycationic lipid

agent.

9. The method of Claim 1, wherein the composition is delivered to the cell in vitro.

10. The method of Claim 1, further comprising administering the composition to a
30 mammalian subject in need of treatment, such that the expression vector is delivered to the cell in vivo.

11. A method of inhibiting neoplastic cellular proliferation and/or transformation of a mammalian cell comprising:

delivering to a mammalian cell a composition comprising a PTTG2 peptide, said PTTG2 peptide being selected from the group consisting of

35 (A) a peptide consisting essentially of amino acid residues 1-191 of (SEQ. ID. NO.:64) or a functional fragment thereof comprising at least amino acid residues 1-180 of (SEQ. ID. NO.:64); and

(B) a mammalian PTTG2 peptide having at least about 95% sequence homology with any of (A),

40 said PTTG2 peptide being complexed with a cellular uptake-enhancing agent, in an amount and under conditions sufficient to enter the cell whereby neoplastic cellular proliferation and/or transformation of the cell is inhibited.

12. The method of Claim 11, wherein the cell is of human origin.

13. The method of Claim 11, wherein the cell exhibits neoplastic, hyperplastic, cytologically dysplastic, or premalignant cellular growth or proliferation.

14. The method of Claim 11, wherein the cell is a malignant cell.

15. The method of Claim 11, wherein the the cell is a pituitary, colon, leukocyte, breast, or ovarian derived cell.

16. The method of Claim 11, wherein the composition is delivered to the cell in vitro.

17. The method of Claim 11, further comprising administering the composition to a mammalian subject, such that the peptide is delivered to the cell in vivo.

18. The method of Claim 11, wherein said uptake-enhancing agent is a polycationic lipid agent.

19. The method of Claim 11, wherein said uptake enhancing agent comprises a cellular uptake-enhancing and/or importation-competent peptide segment.

20. The method of Claim 19, wherein the cellular uptake-enhancing and/or importation-competent peptide segment is a human immunodeficiency virus TAT-derived peptide segment, a signal peptide from Kaposi fibroblast growth factor, ferritin peptide, or lactalbumin- α peptide.

21. A kit comprising:
a composition comprising a polynucleotide comprising a DNA segment encoding a mammalian PTTG2 peptide, said PTTG2 peptide being selected from the group consisting of
(A) a peptide consisting essentially of amino acid residues 1-191 of (SEQ. ID. NO.:64) or a fragment thereof comprising at least amino acid residues 1-180 of (SEQ. ID. NO.:64); and
(B) a mammalian PTTG2 peptide having at least about 95% sequence homology with any of (A); and
instructions for the use of said composition for inhibiting neoplastic cellular proliferation and/or transformation.

22. The kit of Claim 21, wherein the peptide is encoded by a polynucleotide consisting of (SEQ. ID. NO.:63) or a degenerate sequence thereof.

23. A kit comprising:
a composition comprising
(A) a peptide consisting essentially of amino acid residues 1-191 of (SEQ. ID. NO.:64) or a fragment thereof comprising at least amino acid residues 1-180 of (SEQ. ID. NO.:64); and
(B) a mammalian PTTG2 peptide having at least about 95% sequence homology with any of (A); and
instructions for the use of said composition for inhibiting neoplastic cellular proliferation and/or transformation.